



Risk perception study in the framework of
PHARE/CESAR study—central European study
on air pollution and respiratory health
Risk perception, the environment, and
communication strategies in the CESAR project:
results from the Czech Republic

H. Šlachtová^{a,*}, I. Tomášek^a, K. Jones^b, B. Vašina^a, J. Volf^a

^a Regional Institute of Hygiene, Ostrava, Czech Republic

^b London School of Hygiene and Tropical Medicine, London, UK

Abstract

The town Ostrava is an important Czech industrial agglomeration of heavy industry. The impact of industrial production leads to the irreparable damage of human health and the environment. The most significant health risks for the population are caused by heavily polluted air. The health status of children living in this industrial environment is unfavourable effected by industrial pollution and is very important source of respiratory diseases. The town is divided in two parts - the eastern part of the town is the most polluted industrial area which includes the central part of the city with high density of inhabitants. There were selected 3 localities for the purpose of the PHARE study in this part of the town. The western part of Ostrava is relatively clean area therefore was decided to use this part of the town as the control area. For the Risk Perception Study was selected one locality from the eastern part of the city (study location) and the one in the western part (control area). For RP study was chosen the method of the semi-structured interview with 7 key “stake-holders” in each area. The objectives of this part of study is to recognize the perception of possibly risks that have influence on the incidence of respiratory health of inhabitants of the town of Ostrava and the perception of the individual and general responsibility to health and environment issues. The results of RP study are presented separately for area I and II and furthermore are completed with the results of the perception study

* Corresponding author. Regional Institute of Hygiene, Partyzánské nám. 7, 728 92 Ostrava, Czech Republic. Tel.: +42 69 223201; fax: +42 60 6225165; e-mail: khs.ostrava@vsb.cz
<http://www.vsb.cz/~khsova>

that was provided with the method of the focus group discussion (selected parents of children involved into the main PHARE/CESAR study in area I). © 1998 Elsevier Science B.V. All rights reserved.

Keywords: PHARE/CESAR; Air pollution; Risk perception

1. Introduction

The city of Ostrava is situated in the north-east part of the Czech Republic. It is an industrial town with traditional coal mining, steel, and ironwork industries. Presently, there are over 300 000 inhabitants living in Ostrava. The current problem in Ostrava is environmental pollution, particularly air pollution by dusts from heavy industries. Ostrava is one of the most polluted areas in the Czech Republic. The health status of inhabitants is worsening the total standardized mortality rate, due to the incidence of cancers and cardiovascular diseases, in comparison to the general population of Czech Republic.

These reasons lead to the decision of involving Ostrava in the programme which was funded by the Commission of the European Communities (CEC Project No. 94-0472.01) in the framework of the financial and technical assistance provided by the European Union to central and eastern Europe under the PHARE 'Environmental Health and Air Pollution' (PEHAP) Programme. The research programme (called CESAR) covered the period of November 1994 to April 1997.

The CESAR Project was coordinated by the National Institute of Public Health and Environmental Protection in Netherlands, the London School of Hygiene and Tropical Medicine in the UK, and the Agricultural University Wageningen in Netherlands. CESAR was carried out in several regions of Poland, Hungary, the Czech Republic, the Slovak Republic, Romania, and Bulgaria. In each country, four sites with different levels of air pollution were selected. In the Czech Republic, these four localities were selected within one city—Ostrava (three of them in heavy polluted areas and one control—'clean' area). The CESAR study was focused on children aged 7–11, and the number of children was 4000 per country (or a total of 24 000 children); the CESAR Project is, therefore, one of the largest studies on air pollution and respiratory health in the world. It is also the first research of this type provided in the Czech Republic.

1.1. Projects formulated for the research programme

- A project on the relationship between ambient air pollution and chronic respiratory diseases in children;
- A project on quality assurance;
- A project on risk perception and risk communication.

The Risk Perception and Communication Study focused on the following objectives: (i) to provide descriptive data on the environmental risk perception of different stakeholders and different communities; (ii) to determine, in general, the beliefs and conceptions about risk and, particularly, how air pollution is viewed relative to other social and environmental issues; (iii) to understand the differences between the public

and the stakeholders' view of responsibility on environmental risk management; (iv) to generate baseline descriptive data against which a future survey might be compared; (v) to build the capacity of participating countries with the integration of qualitative methodologies to be used in risk perception, and communication research for risk management activities.

2. Experimental

The Risk Perception and Risk Communication study (Study III of the larger CESAR Project) was divided into two parts.

Part I includes semi-structured interviews (SSI) with 'stakeholders' (also called 'key informants') in two study locations—the 'dirty' (industrial) and the 'clean' (residential) areas—and Focus Group Discussion (FGD) with the parents of children involved in the larger CESAR Project.

Part II consists of a structured Risk Perception Questionnaire for population samples in each of the study locations.

2.1. Part I

2.1.1. Semi-structured interviews

For the semi-structured interviews, seven stakeholders (an elected official, an environmentalist, a manager from a local large industrial plant, a trade unionist from the same plant, an NGO representative, a physician, and a journalist) in each area were chosen and they were asked the core questions on certain topics and the answers were tape-recorded. The data obtained were divided into category groups during the analysis process. Each interview was analysed according to the topics: air quality, soil and water quality, health effects due to air pollution (generally and locally), relative concern for the environment compared to other concerns, influences on risk perception (openness of authorities, trust in responsible authorities, media publicity, controllability of exposures, citizen's participation, disadvantages of expenditure on environmental control), usefulness of CESAR study, and suggestions for communicating results.

2.1.2. Focus group discussion

For FGD, parents of children involved in the larger CESAR study were invited for an informal discussion in a pub (we met four people with primary education, one with apprenticeship, and one with secondary education). They were asked to discuss the same issues as the stakeholders in semi-structured interviews. Their discussion was also tape-recorded.

2.2. Part II

2.2.1. Risk perception questionnaire

In reflection to the results of the SSIs and the FGD, the risk perception questionnaire was elaborated. The 2400 inhabitants of the four CESAR study areas were randomly

selected from the central register of citizens in Ostrava. We decided for the postal delivery and collection of the questionnaires.

3. Results and discussion

3.1. Semi-structured interviews

In spite of specifying one area as the dirty and the other area as the clean one, the environmental and health issues were perceived in similar ways. On top of the issues stressed by the stakeholders was improvement of industrial pollution, as well as the increasing pollution due to traffic, sprinkle of roads and local heating; stress caused by uncertainty and insufficient adaptability to the change of life conditions; the people's lack of responsibility to their health; crime; consuming life-style; social problems—bad interpersonal communication and apathy; lack of information about indoor air; lack of trust to the information given by the politicians and the mass media; and poor responsibility for living environmental status. These issues were stressed by nearly all stakeholders—only the order of issues was different. Differences among stakeholders were in the strength of perceiving risks but it was also influenced by the social position and personality of the stakeholders.

3.2. Focus group discussion

The results of FGD were completely different from the results of the interviews. Common people were worried about the different types of problems and risks. Their perception is mostly opposite of the stakeholders' perception. In FGD, they mentioned mostly the overloaded electric power supply system which causes the impossibility to change the local heating system from coal to electric; poor status of housing sewerage system resulting into moisture on cellars and mildew in flats; poor housing conditions; absolute lack of concern by concerned authorities regarding these problems; feeling of powerlessness after unsuccessful negotiations; the lingering bad situation caused by smog releases despite improvement of industrial pollution; progressively worsening health conditions, especially breathing problems and allergies (with smog, grass and flowering poplars as the causes of allergies); lack of information about indoor air pollution; and lack of trust in responsible authorities.

3.3. Risk perception questionnaires

We received 727 replies out of 2400 questionnaires sent, which comprises 30.3% of the total. The risk perception of this random sample of population does not confirm the perception of improvement of industrial pollution in comparison with the past, but confirmed the perception of increasing level of dust and exhalation caused by traffic. People do not trust the responsible authorities, but they also do not feel any responsibility towards environmental issues, and even for their own health. They can only perceive the worsening status of health care. The respondents also mentioned a lack of brief but

factual information on environment, health and other issues, which were discussed in detail by the mass media, but missed global information. The question concerning the indoor air was skipped in most of the questionnaires.

4. Conclusions

In spite of the differences between the four areas, there are similarities based on the predictions connected with historical and social development of the town. One of the most important facts is that inhabitants of various town districts are connected by the industry and the same lifestyles. It resulted to very similar risk perception. The list of problems and risks is relatively the same in all areas but their importance is stressed and perceived in different ways by common people and the stakeholders. The necessity of the risk communication is confirmed by this risk perception study. It is extremely important to find a common strategy for the communication of risk issues and for improving the present status of feeling the responsibility both by the politicians and the people.

Acknowledgements

The CESAR study was realized owing to the activities of the members of the CESAR Project Consortium, consultants from outside institutions, and staff of institutes involved in the project.